DRAFT PROPOSAL
2005 PROJECT YEAR

Project Title: Bull Trout Use of the Lower Tucannon River, Lower Monumental Dam Pool and Little Goose Dam

Project Leader: **POC: Fred Higginbotham (COE)**

Study Code:

Anticipated Duration: **2005 – 2007**

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Bull Trout Use of the Lower Tucannon River, Lower Monumental Dam Pool and Little Goose Dam

1.0 GENERAL BACKGROUND AND PURPOSE

The Walla Walla District of the Corps of Engineers is in the process of completing a review of research related to bull trout distribution and movement throughout much of their district. The overall goal of the synthesis effort was to identify population or research projects that could be augmented through additional research by the Walla Walla District.

Current information on bull trout abundance and distribution in the Tucannon River suggests that this is the population most likely to utilize the Federal Columbia River Power System (FCRPS) in the lower Snake River as rearing and over-wintering habitat. Other bull trout populations that are summarized in the synthesis effort include the Yakima, John Day, Deschutes, Umatilla, and Grande Ronde rivers, and Asotin Creek. In 2002 and 2003, Faler et al. (2003, 2004) evaluated the potential impact of the FCRPS on migratory capabilities of bull trout in the Tucannon River. A total of 76 (41 in 2002 and 35 in 2003) bull trout were implanted with radio tags and 297 (106 in 2002 and 191 in 2003) bull trout were implanted with PIT tags. In 1992, 2002, and 2003 adult bull trout migrated to upstream spawning areas in late summer and spawned in August and September. Following spawning, bull trout quickly moved downstream to over-winter. In 1992, two radio-tagged bull trout were located in the lower Tucannon River in November and not located there on extensive subsequent tracking efforts in December. Radio-tagged bull trout were detected as far downstream as Rkm 16 in 2002 and Rkm 10.2 in 2003. A significant outcome of the 2003 tracking effort was the identification of one radio-tag in Alkali Flat Creek upstream and across the Snake River from the mouth of the Tucannon River (Faler et al. 2004). Additionally, two bull trout were caught on the north side of the Snake River downstream of Little Goose Dam during the 2004 spring Chinook salmon fishery and bull trout have been caught in the slack water reach at the mouth of the Tucannon River during the steelhead fishery (Mendel, G., WDFW, *personal communication*, 2004). Faler et al. (2004) also reported that sub-adult or small adult bull trout (range 207-325 mm FL) were captured in a smolt trap operated by the WDFW Snake River Laboratory at Tucannon River Rkm 2.6 in the fall and winter. Data from the juvenile fish facility and adult ladder counting window at Little Goose Dam shows consistent observations of bull trout. In 2004, 15 bull trout were observed going over the separator at Little Goose Dam from April through June (Bailey, J., USACE, *personal communication*, 2004) and eight bull trout were observed at the adult ladder counting window (Baxter, R., USACE, *personal communication*). Based on radio-telemetry, creel census data (Underwood et al. 1995; Faler et al. 2003, 2004), and observations at Little Goose Dam it is apparent that bull trout are distributed throughout the Tucannon River and likely use the Snake River as over-winter and rearing habitat.

Past research by Faler et al. (2003, 2004) has focused on determining the seasonal distribution and movement pattern of adult bull trout (> 327 mm TL) in the Tucannon River. Movement of sub-adult or juvenile bull trout has not been evaluated due in part to the size of radio-transmitter required to get sufficient battery life. Connecting the Tucannon River population of bull trout to those observed at Little Goose Dam could be done analytically through genetic comparison or empirically through observations of marked individual of known origin at either of the two locations.

1.1 Site Description

Lower Monumental (LMN) and Little Goose (LGO) Dams are the second and third dams on the Snake River upstream from its' confluence with the Columbia River, respectively. Observation data from the juvenile fish facilities and the adult fish ladder count windows at LMN and LGO indicate that the largest number of bull trout that use the lower Snake River enter the river from the Tucannon River.

1.2 Specific Objectives

1. Determine the origin of bull trout observed at the juvenile fish facility at Little Goose and Lower Monumental dams.
2. If the Contractor can obtain the proper state and Federal permits, use accepted research techniques (e.g. fin clipping, scale removal, etc.) in order to identify bull trout that may pass through the adult ladder or juvenile fish facilities at LGO or LMN dams.
3. Monitor the movement of PIT-tagged bull trout near the mouth of the Tucannon River.
4. Augment existing telemetry projects through coordination with other researchers.

2.0 TASK DETAILS

The contractor will cooperate and coordinate with other researchers in the Tucannon basin to insert PIT tags into bull trout that are trapped at existing facilities on the Tucannon River. PIT-tagged bull trout will be released into the Tucannon River. All bull trout observed in the juvenile fish facilities at Little Goose and Lower Monumental dams will be scanned for PIT tags to determine their origin. A PIT tag detector similar to the one being developed for the corner collector at Bonneville Dam may be installed near the mouth of the Tucannon River if long distance detection technology is developed by the time this study is implemented.

2.1 Study Design

The most likely origin of bull trout that pass downstream through the juvenile fish facilities at Little Goose and Lower Monumental dams is from the Tucannon River, the Grande Ronde River, the Clearwater River, and Asotin Creek. This study will verify

whether the origin of bull trout passing LGO or LMN dams is from the Tucannon River or another tributary. The information gathered should help the Corps of Engineers make future design and operation decisions for the lower Snake River and McNary pool.

2.2 Coordination Between Researchers

One of the main considerations in this proposal is the coordination between the Contractor and other researchers, especially in the Tucannon basin and the Lower Snake River. In order to meet the objectives of this study the Contractor must coordinate the use of trapping, marking and/or tagging efforts that are already in place in the Tucannon River basin. The Washington State Department of Fish and Wildlife and the U.S. Fish and Wildlife Service have expressed concerns over the limited number of suitable size bull trout and the effects on the Tucannon population from handling and monitoring these fish.